

Applicants have submitted a revised Sequence Listing in both paper and computer readable form as required by 37 C.F.R. 1.821(c) and (e). Amendments directing its entry into the specification have also been incorporated herein. The content of the paper and computer readable copies are the same and no new matter has been added.

The additional sequences set forth in Figure 6 which were not previously listed in the Sequence Listing filed July 30, 2001, have now been incorporated into the revised Sequence Listing in accordance with U. S. practice. The new sequences, SEQ ID Nos: 5-9, and portions of SEQ ID No: 1 have also been identified and referenced in the Brief Description of the Drawings (See Appendix A) in accordance with U.S. practice.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "Version with markings to show changes made."

In view of the foregoing amendments, it is believed that the application is now in condition for allowance. Such action is thus respectfully requested.

Respectfully submitted,

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APPENDIX A

Dbf4 motif-N of Human H37 ("H37" and "huDbf4N") protein shown in Figure 6

corresponds to positions 32-98 of SEQ ID No: 1 of the Sequence Listing. Dbf4 motif-N of

Mouse H37 ("mu-H37" and "muDbf4N") protein shown in Figure 6 corresponds to SEQ ID No:

5. Dbf4 motif-N of Fruit Fly H37 ("Dm-H37" and "DmDbf4N") protein shown in Figure 6

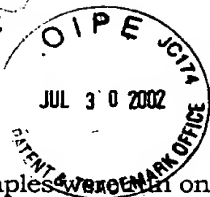
corresponds to SEQ ID No: 6. Dbf4 motif-C of Human H37 ("H37") protein corresponds to

positions 263-322 of SEQ ID No: 1. Dbf4 motif-C of Mouse H37 ("mu-H37") protein

corresponds to SEQ ID No: 7. Dbf4 motif-C of Fruit Fly H37 ("Dm-H37") protein corresponds

to SEQ ID No: 8. Dbf4 motif-C of Budding Yeast ("Dbf4") corresponds to SEQ ID No: 9.

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In all cases, samples were run on 8% SDS-PAGE.

Fig. 5 shows an amino acid sequence of the full-length H37 protein which is as same as the SEQ ID NO: 1.

5

Fig. 6 shows schematic representation of conserved regions between Dbf4 and H37. The double-arrowed region on Dbf4 was reported to be sufficient for interaction with huCdc7. Solid and gray double-arrowed region on H37 indicates the portion essential for interaction with huCdc7 or that sufficient for activation of huCdc7 kinase activity, respectively.

10

→ Insert "Appendix A"

Fig. 7 is a schematic representation of N-terminal and C-terminal deletion derivatives of H37 proteins. The number at the end of each bar indicates the portion of the amino acid (corresponding to SEQ ID NO: 1) at the deletion endpoint. The striped region indicates Dbf4 motif-C.

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Fig. 8 shows lacZ activity of H37 deletion derivatives in two-hybrid assay with huCdc7.

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Fig. 9 shows the result of antibody coprecipitation method in which H37 deletion derivatives and huCdc7 were co-expressed in COS7 cells and a complex formation was measured.

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Fig. 10 (a) is the result of northern analysis of H37 mRNA expression in various tissues, and (b) is the result of a northern analysis of H37 mRNA expression in various cancer cell lines.

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Fig. 11 shows the results where WI38 cells in a resting phase are stimulated by addition of 10% of serum and DNA contents at various stages were analyzed by means of FACS.

Fig. 12 shows the result of northern analysis of H37 and huCdc6